Heindel and Noyes
P.O. Box 64709 Burlington, Vermont 05406-4709

• Consulting Hydrogeologists
• Engineers
• Environmental Scientists
802-658-0820
Fax 802-860-1014

November 4, 1997

Michael Young
Waste Management Division
103 South Main Street/West Office Building
Waterbury, VT 05041-0404

Re: Former Sweet and Burt Bulk Storage Facility, Hardwick, Vermont
Site #97-2129

Dear Mr. Young:

This letter transmits the results of confirmatory ground water quality sampling and water table elevation measurements conducted at the above-referenced site by Heindel and Noyes on August 15, 1997 (Appendix 1, page 1). These activities were performed in accordance with a work plan approved by the Sites Management Section (SMS) in order to verify ground water contaminant concentrations and ground water flow direction at the site, which were previously reported by GZA Geo Environmental, Inc. (GZA).[1] Based on the results of the August sampling, which confirm the limited risk to public health and the environment, we recommend that the site be removed from the State's hazardous waste site list. If you concur, we will provide you with a standard Site Management Activities Complete (SMAC) application.

WATER TABLE ELEVATIONS

Prior to ground water sampling, water level measurements were taken from the top of the PVC well casings. These water level measurements were subsequently converted to relative ground water elevations using the top of casing elevations previously surveyed by GZA. A water table contour map was constructed and is included as Appendix 1, page 2. Water table elevations are tabulated in Appendix 1, page 3. The August 15, 1997 water table contours confirm that shallow ground water at the site flows in a southwest direction towards the Lamoille River, located approximately 600 feet downgradient.

[1]GZA GeoEnvironmental, Inc., Phase II Environmental Site Evaluation Report, 1/8/97.

GROUND WATER QUALITY RESULTS

Monitoring wells GZH-1 through GZH-5 were sampled according to standard H&N protocol and submitted to Endyne, Inc. for analyses via EPA methods 602 and 8100 - modified for volatile organic compounds (VOCs) and total petroleum hydrocarbons (TPH) testing, respectively. Analytical results are summarized in Appendix 1, page 4. Laboratory reports are included in Appendix 2, pages 1-5. Results indicate that all monitoring well samples were below the detection limits for both analytical methods. Monitoring well GZH-2, located immediately adjacent to the sites' above-ground storage tanks, had greater than 10 unidentified peaks detected during EPA method 602 analysis. No unidentified peaks were detected in the other downgradient monitoring wells.

RECOMMENDATIONS

Based on the analytical results discussed above, we believe that the low-level contamination detected onsite does not pose a threat to public health or the environment. In light of this, we recommend that the site be removed from the State's official list. If you agree with our recommendation, we will forward a formal SMAC request.

We look forward to receiving your comments. Should you have any questions concerning this submittal, please feel welcome to contact either Jeff Noyes or myself.

Sincerely,

Eric J. Swiech
Hydrogeologist

EJS/jm
Enclosure

cc: Tony Thompson
Kate Kronk, Esq. (Miller, Eggleston, & Cramer, Ltd.)

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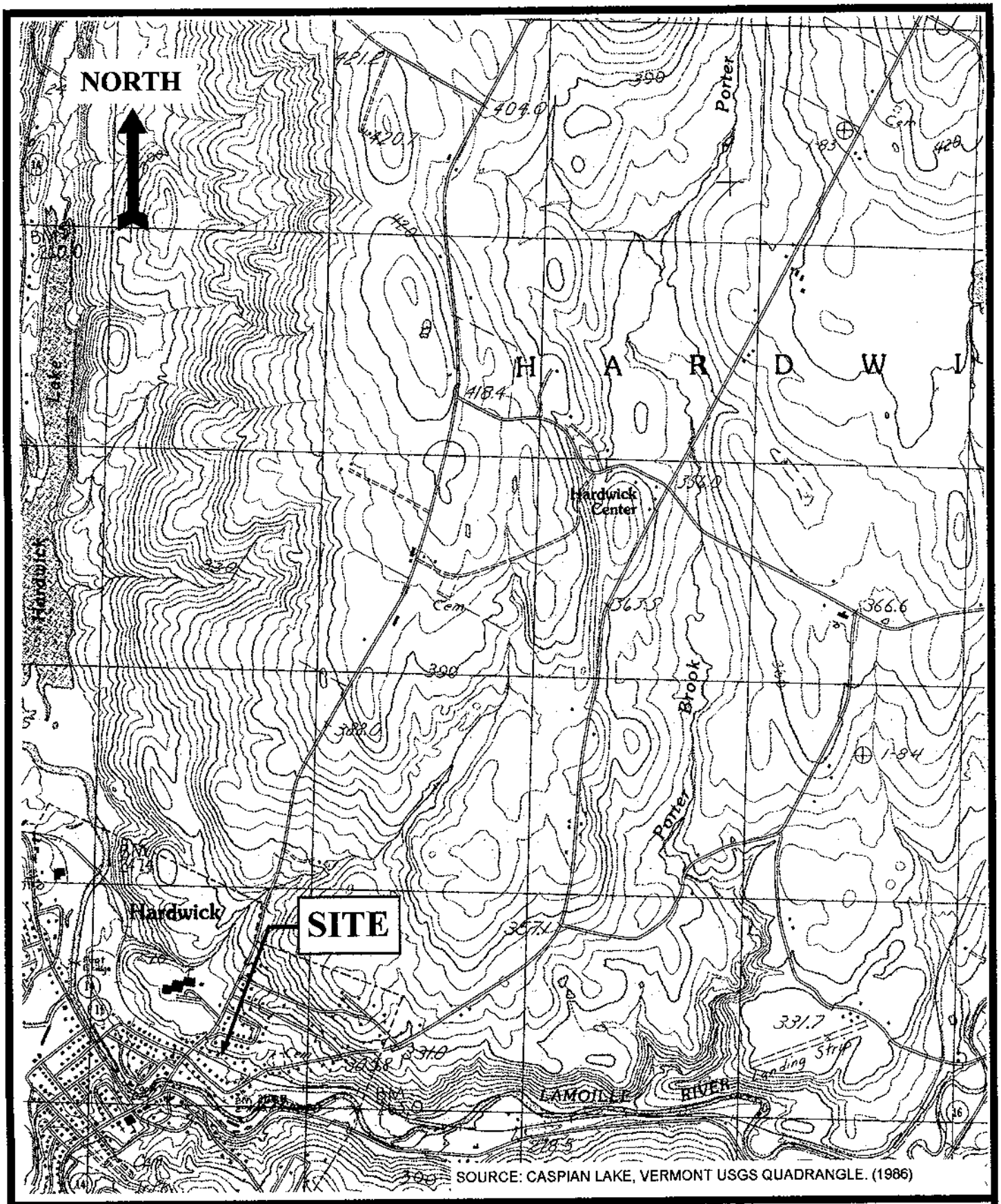
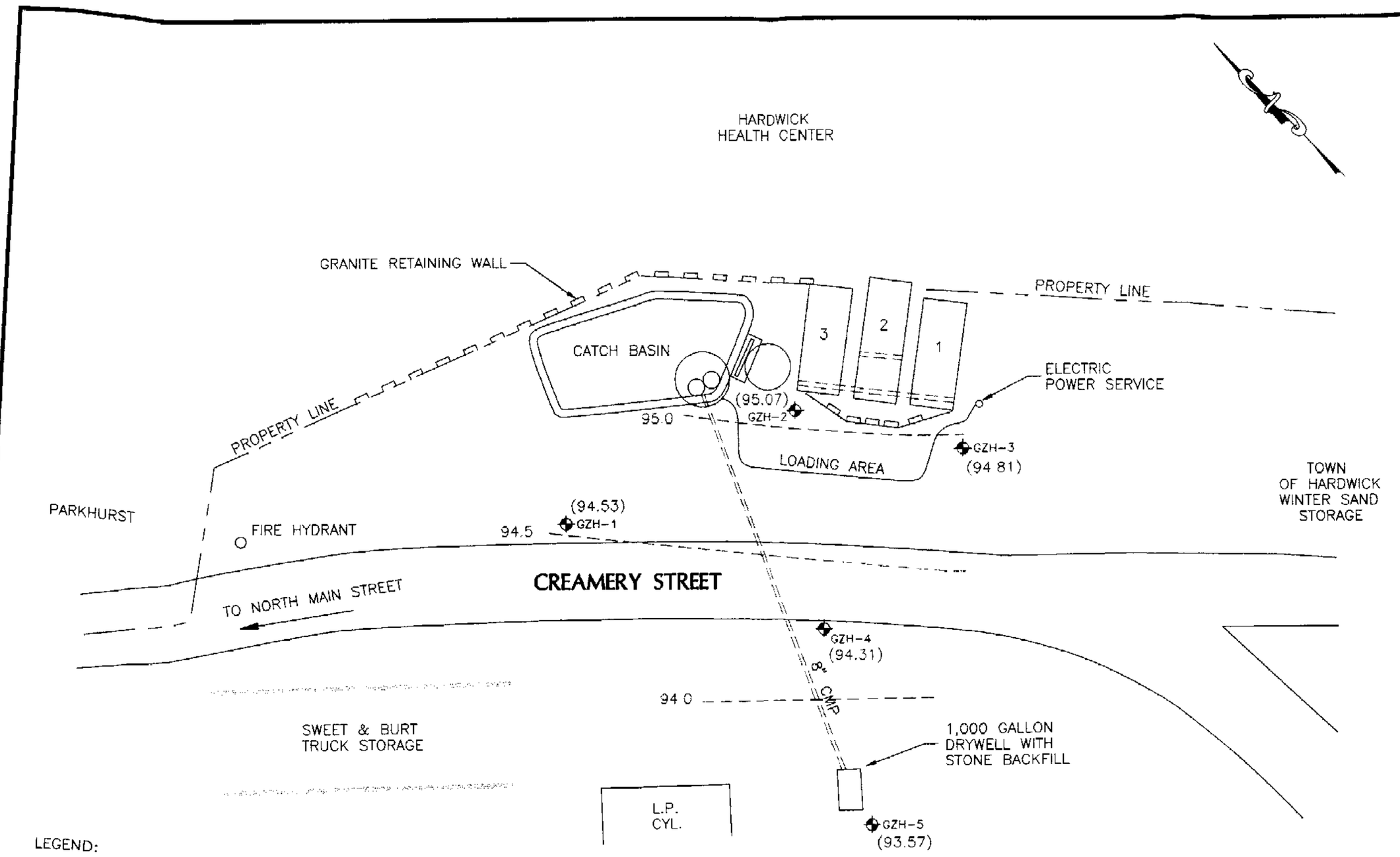


SOURCE: CASPIAN LAKE, VERMONT USGS QUADRANGLE. (1986)

Sweet & Burt/Hardwick Bulk Plant HARDWICK, VERMONT	DATE: OCTOBER 1, 1997 PROJECT NO. 97028	*Heindel and Noyes* • Hydrogeology • Ecology • • Environmental Engineering •
SITE LOCATION MAP	DRAWN BY: M. Luman PROJ. MGR: E. Swiech	CONSULTING SCIENTISTS AND ENGINEERS P.O. BOX 64709 – BURLINGTON, VERMONT 05406
SCALE: 1"=2000' / FILE: C:\SBHARDWK\SITEMAP	APPROVED: J. Noyes	PREPARED BY: INFORMATION & VISUALIZATION SERVICES



LEGEND:

GZH-4 MONITORING WELL

— — — WATER TABLE ELEVATION CONTOUR (8/15/97)

KEY:

TANK 1 – 14,700 GAL. KERESENE AST
TANK 2 – 14,700 GAL. #2 FUEL OIL AST
TANK 3 – 14,700 GAL. #2 FUEL OIL AST
TANK 4 – 14,700 GAL. #2 FUEL OIL AST

SOURCE: GZA GEOENVIRONMENTAL, INC.

Heindel and Noyes
• Hydrogeology • Ecology •
• Environmental Engineering •
CONSULTING SCIENTISTS AND ENGINEERS
P.O. BOX 64709
BURLINGTON, VERMONT 05406-4709
Prepared By:
Information & Visualization Services

DATE: SEPTEMBER 30, 1997
PROJECT NO. 97028
DRAWN BY: C. Hardy
PROJ. MGR: E. Ewich
APPROVED: J. Noyes
☐ DRAFT ☐ FINAL

SWEET & BURT/HARDWICK BULK PLANT
HARDWICK, VERMONT

SITE PLAN

FILE: C:\SWEETBRT\HARMAP

SCALE: NOT TO SCALE

TABLE 1
WATER TABLE ELEVATIONS
August 15, 1997
Sweet & Burt, Inc. - Hardwick Bulk Plant
Hardwick, Vermont

Monitoring Well	Top of Casing (TOC Elevation (ft)	Depth to Groundwater (ft btc)	Water Table Elevation (ft)
GZH-1	102.87	8.34	94.53
GZH-2	100.79	5.72	95.07
GZH-3	101.02	6.21	94.81
GZH-4	98.63	4.32	94.31
GZH-5	103.13	9.56	93.57

Notes:
- Monitoring wells surveyed on December 10, 1996 by GZA
- TOC = Top of casing
- btc = below top of casing

TABLE 2
GROUND WATER QUALITY ANALYSES
EPA Methods 602 and TPH 8100-modified
Sweet & Burt, Inc. - Hardwick Bulk Plant
Hardwick, Vermont

	Benzene	Chloro-benzene	1,2-Di-chloro-benzene	1,3-Di-chloro-benzene	1,4-Di-chloro-benzene	Ethyl-Benzene	MTBE	Toluene	Total Xylenes	Unidentified Peaks	TPH via 8100-modified
VT Enforcement Standard [1]	5	100	600.0	600.0	75.0	680	none	2420	400	none	none
VT Preventive Action Limit [1]	0.5	50	300.0	300.0	7.5	340	none	1210	200	none	none
VT Health Advisory [2]	1	none	none	600.0	none	none	40	none	none	none	none
Federal MCL [2]	5	100	600.0	none	75.0	700	none	1000	10,000	none	none
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	--	mg/l
GZH-1	<1	<1	<1	<1	<1	<1	<10	<1	<1	0	<0.8
GZH-2	<1	<1	<1	<1	<1	<1	<10	<1	<1	>10	<0.8
GZH-3	<1	<1	<1	<1	<1	<1	<10	<1	<1	0	<0.8
GZH-4	<1	<1	<1	<1	<1	<1	<10	<1	<1	0	<0.8
GZH-5	<1	<1	<1	<1	<1	<1	<10	<1	<1	0	<0.8

[1] Vermont ESs and PALs from 1988 GWPRS
[2] Vermont HAs and Federal MCLs from March 1996 Vermont Health Advisory Reference Guide

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

REPORT OF LABORATORY ANALYSIS

CLIENT: Heindel and Noyes
PROJECT NAME: Sweet & Burt
DATE REPORTED: August 28, 1997
DATE SAMPLED: August 15, 1997

PROJECT CODE: HNSB1907
REF. #: 108,182 - 108,188

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody record.

Chain of custody indicated sample preservation with HCl.

All samples were prepared and analyzed by requirements outlined in the referenced methods and within the specified holding times.

All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced methods.

Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy were monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Reviewed by,

Mark Jamel
for

Harry B. Locker, Ph.D.
Laboratory Director

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LABORATORY REPORT

TOTAL PETROLEUM HYDROCARBONS (TPH) BY MODIFIED EPA METHOD 8100

DATE: August 28, 1997
CLIENT: Heindel and Noyes
PROJECT: Sweet & Burt
PROJECT CODE: HNSB1907
COLLECTED BY: L. Lapey
DATE SAMPLED: August 15, 1997
DATE RECEIVED: August 15, 1997

Reference #	Sample ID	Concentration (mg/L)[1]
108,182	Trip Blank; 10:40	ND[2]
108,183	GZH-1; 11:40	ND
108,184	GZH-2; 11:35	ND
108,185	GZH-3; 11:30	ND
108,186	GZH-4; 11:45	ND
108,187	GZH-5; 11:55	ND
108,188	Duplicate; 11:30	ND

Notes:

1 Method detection limit is 0.8 mg/L.
2 None detected

ENDYNE, INC.

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CHAIN-OF-CUSTODY RECORD

22882

Project Name: Sweet & Burt Site Location: Hardwick, VT	Reporting Address: H&N	Billing Address: H&N
Endyne Project Number: HNSB1907	Company: H&N J. Noyes Contact Name/Phone #: 658-0820	Sampler Name: L. Lapey Phone #: 658-0820

Lab #	Sample Location	Matrix	GRAB	COMP	Date/Time 8.15.97	Sample Containers No.	Sample Containers Type/Size	Field Results/Remarks	Analysis Required	Sample Preservation	Rush
108182	Trip blank	H2O			10:40	2	40mL		8020/TPH	8100	
	GZH-1				11:40				8020	HCl	
108183	GZH-1							TPH	8100		
	GZH-2				11:35				8020		
108184	GZH-2								8100		
	GZH-3				11:30				8020		
108185	GZH-3								8100		
	GZH-4				11:45				8020		
108186	GZH-4								8100		
	GZH-5				11:55				8020		
108187	GZH-5								8100		
108188	Duplicate				11:30				8020/TPH 8100		

Relinquished by: Signature Laura Lapey	Received by: Signature	Date/Time 8/15/97 1:40
Relinquished by: Signature	Received by: Signature	Date/Time

New York State Project: Yes ____ No X

Requested Analyses

1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 8010/8020
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD_5	14	Turbidity	19	BTEX	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify):										

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REPORT OF LABORATORY ANALYSIS

CLIENT: Heindel & Noyes
PROJECT NAME: Sweet & Burt
REPORT DATE: August 27, 1997
DATE SAMPLED: August 15, 1997

PROJECT CODE: HNSB1906
REF.#: 108,175 - 108,181

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody. Chain of custody indicated sample preservation with HCl.

All samples were prepared and analyzed by requirements outlined in the referenced method and within the specified holding times. All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced method. Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Individual sample performance was monitored by the addition of surrogate analytes to each sample. All surrogate recovery data was determined to be within laboratory QA/QC guidelines unless otherwise noted.

Reviewed by,

Harry B. Locker, Ph.D.
Laboratory Director

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EPA METHOD 602--PURGEABLE AROMATICS

CLIENT: Heindel & Noyes
PROJECT NAME: Sweet & Burt
CLIENT PROJ. #: NI

DATE RECEIVED: August 15, 1997
REPORT DATE: August 27, 1997
PROJECT CODE: HNSB1906

Ref. #:	108,175	108,176	108,177	108,178	108,179
Site:	Trip Blank	GZH-1	GZH-2	GZH-3	GZH-4
Date Sampled:	8/15/97	8/15/97	8/15/97	8/15/97	8/15/97
Time Sampled:	10:40	11:40	11:35	11:30	11:45
Sampler:	L. Lapey	L. Lapey	L. Lapey	L. Lapey	L. Lapey
Date Analyzed:	8/26/97	8/26/97	8/26/97	8/26/97	8/27/97
UIP Count:	0	0	>10	0	0
Dil. Factor (%):	100	100	100	100	100
Surr % Rec. (%):	88	87	87	90	87
Parameter	Conc. (ug/L)	Conc. (ug/L)	Conc. (ug/L)	Conc. (ug/L)	Conc. (ug/L)
Benzene	<1	<1	<1	<1	<1
Chlorobenzene	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	<1	<1	<1	<1	<1
Ethylbenzene	<1	<1	<1	<1	<1
Toluene	<1	<1	<1	<1	<1
Xylenes	TBQ <1	<1	<1	<1	<1
MTBE	<10	<10	<10	<10	<10

Ref. #:	108,180	108,181			
Site:	GZH-5	Duplicate			
Date Sampled:	8/15/97	8/15/97			
Time Sampled:	11:55	11:30			
Sampler:	L. Lapey	L. Lapey			
Date Analyzed:	8/27/97	8/27/97			
UIP Count:	0	0			
Dil. Factor (%):	100	100			
Surr % Rec. (%):	89	88			
Parameter	Conc. (ug/L)	Conc. (ug/L)			
Benzene	<1	<1			
Chlorobenzene	<1	<1			
1,2-Dichlorobenzene	<1	<1			
1,3-Dichlorobenzene	<1	<1			
1,4-Dichlorobenzene	<1	<1			
Ethylbenzene	<1	<1			
Toluene	<1	<1			
Xylenes	<1	<1			
MTBE	<10	<10			

Note: UIP = Unidentified Peaks TBQ = Trace Below Quantitation NI = Not Indicated

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CHAIN-OF-CUSTODY RECORD

22882

Project Name: Sweet & Burt Site Location: Hardwick, VT	Reporting Address: H&N	Billing Address: H&N
Endyne Project Number: H&NSB1906	Company: H&N J. Noyes Contact Name/Phone #: 658-0820	Sampler Name: L. Lapey Phone #: 658-0820

Lab #	Sample Location	Matrix	G R A B	C O M P	Date/Time 5.15.97	Sample Containers No.	Sample Containers Type/Size	Field Results/Remarks	Analysis Required	Sample Preservation	Rush
108175	Trip blank	H2O			10:40	2	40mL		8020/TPH	8100	
108176	GZH-1				11:40				8020	HCl	
	GZH-1							TPH	8100		
108177	GZH-2				11:35				8020		
	GZH-2								8100		
108178	GZH-3				11:30				8020		
	GZH-3								8100		
108179	GZH-4				11:45				8020		
	GZH-4								8100		
108180	GZH-5				11:55				8020		
	GZH-5								8100		
108181	Duplicate				11:30				8020/TPH 8100		

Relinquished by: Signature Laura Lapey	Received by: Signature	Date/Time 5/15/97 1:40
Relinquished by: Signature	Received by: Signature	Date/Time

New York State Project: Yes ____ No X

Requested Analyses

1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 8010/8020
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD_5	14	Turbidity	19	BTEX	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify):										